



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D3639-4
Job Sheet 173036



Part No: D3639-4

Job Qty: 8 ea

Part Name: Doubler



ship March 1 or before

Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/26/18

Job Tracking No:

Due Date: 2/28/18

Created By: Linda Lacelle

Type: SOLD

Description:

Note: DWG REV A IPP Rev:A New Issue 07-07-20 JLM Verified By:EC

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	8 Ea		2/27/18	0.00	0.00	Start Up Waterjet		<i>de 18/02/26</i>
100	Waterjet	8 pcs		2/27/18	0.00	0.66	Waterjet1		<i>de 18/02/26</i>
110	QC	8 pcs		2/27/18	0.00	0.00	QC2 Waterjet-2		<i>de 18/02/26</i>
120	QC	8 pcs		2/27/18	0.00	0.00	QC8-3		<i>38</i>
130	Brake NC	8 pcs		2/27/18	0.00	0.32	Brake NC 1		<i>9-88 DAS SB</i>
140	QC	8 pcs		2/27/18	0.00	0.00	QC5		<i>38</i>
150	HandFinish	8 pcs		2/28/18	0.00	0.54	HandFinish1		<i>18-02-27</i>
160	QC	8 pcs		2/28/18	0.00	0.00	QC7-2		<i>38</i>
170	Packaging	8 pcs		2/28/18	0.00	0.00	Packaging3-1	<i>SB34A</i>	<i>0 0 0 0</i>
180	QC21-SA	8 Ea		2/28/18	0.00	0.00	QC21		<i>MAR 01 2018</i>

Part Op 100 - 1-Cut as per Dwg D3639 Dwg Rev: A Prog Rev: A 2-Deburr if necessary

Descriptions: 110 - QC2- Inspect parts off machine FAI/FAIB

120 - QC8- Inspect parts - second check

130 - Form as per Dwg D3639

140 - QC5- Inspect part completeness to step on W/O

150 - Chemical Conversion Coat per QSI005 4.1

160 - QC7-Inspect Chemical Conversion Coat

170 - Identify as per dwg & Stock Location: _____

180 - QC21- Final Inspection - Work Order Release

*DAS
21
9-88*

MAR 05 2018

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M2024T3S.050	2024-T3 .050 Sheet	3.4216 sf (.4277 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	M2024T3S.050	3	117	0

Part Specifications

Specifications could not be found.

QA Closed: _____ Date: _____

Work Order update only

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS																																																							
Part No. _____		Rework ☐		Skid-tube ☐		Cross tube ☐		Water Jet ☐		Engineering ☐																																																	
NCR No. _____		Scrap ☐		Machining ☐		Small Fab ☐		Prod. Eng. Coord. ☐		Quality ☐																																																	
		Use-as-is ☐		Thermoforming ☐				Store/Packaging ☐		Other ☐																																																	
		Suspected Unapproved ☐		Large Fab ☐				Supplier ☐																																																			
Date : _____		Step #: _____		OT _____						MRB (QSI042) Approval _____																																																	
Description Work Order Deviation										Completed By _____																																																	
										Lead hand / Supervisor Approval Verification _____																																																	
										QC / QA Coordinator Approval _____																																																	
Root Cause <table border="1"> <tr><td>Environment</td><td>☐</td><td>No Re-verification</td><td>☐</td></tr> <tr><td>Design</td><td>☐</td><td>Operator</td><td>☐</td></tr> <tr><td>Doc/Data</td><td>☐</td><td>Offset/Setup</td><td>☐</td></tr> <tr><td>Equip/Tooling</td><td>☐</td><td>Supplier</td><td>☐</td></tr> <tr><td>Handling/Pre</td><td>☐</td><td>Training</td><td>☐</td></tr> <tr><td>Material</td><td>☐</td><td>Use for Testing</td><td>☐</td></tr> <tr><td>Internal Transport</td><td>☐</td><td>Poor Information</td><td>☐</td></tr> <tr><td>Tribal Knowledge</td><td>☐</td><td>Rushing</td><td>☐</td></tr> <tr><td>LOA</td><td>☐</td><td>Product Improvement</td><td>☐</td></tr> <tr><td>Substation</td><td>☐</td><td>Process Improvement</td><td>☐</td></tr> <tr><td>Past Expiry Date</td><td>☐</td><td>Manufacturing Process</td><td>☐</td></tr> <tr><td>Misidentified</td><td>☐</td><td>Past Due</td><td>☐</td></tr> </table> OTHER : _____												Environment	☐	No Re-verification	☐	Design	☐	Operator	☐	Doc/Data	☐	Offset/Setup	☐	Equip/Tooling	☐	Supplier	☐	Handling/Pre	☐	Training	☐	Material	☐	Use for Testing	☐	Internal Transport	☐	Poor Information	☐	Tribal Knowledge	☐	Rushing	☐	LOA	☐	Product Improvement	☐	Substation	☐	Process Improvement	☐	Past Expiry Date	☐	Manufacturing Process	☐	Misidentified	☐	Past Due	☐
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DART AEROSPACE LTD		Work Order: 178036
Description: Doubler		Part Number: D3639-4
Inspection Dwg: D3639 Rev: A		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.625	+0.008/-0.001	Ø.624	1			
Ø0.191	+0.005/-0.001	Ø.190	1			
Ø0.098	+0.004/-0.001	Ø.097	1			
0.45	+/-0.030	.45	1			
1.350	+/-0.010	1.344	1			
2.25	+/-0.030	2.25	1			
3.15	+/-0.030	3.15	1			
4.05	+/-0.030	4.05	1			
4.95	+/-0.030	4.95	1			
5.85	+/-0.030	5.85	1			
6.75	+/-0.030	6.75	1			
7.65	+/-0.030	7.65	1			
8.55	+/-0.030	8.55	1			
9.350	+/-0.010	9.347	1			
9.45	+/-0.030	9.45	1			
10.350	+/-0.010	10.345	1			
11.25	+/-0.030	11.25	1			
12.15	+/-0.030	12.15	1			
12.85	+/-0.030	12.85	1			
13.86	+/-0.030	13.86	1			
13.96	+/-0.030	13.96	1			
0.805	+/-0.010	.808	1			
1.00	+/-0.030	1.00	1			
2.100	+/-0.010	2.103	1			
3.30	+/-0.030	3.30	1			
2.000	+/-0.010	1.998	1			
2.590	+/-0.010	2.587	1			

Measured by: <u>de</u>	Audited by: <u>38</u>	Prototype Approval: N/A
Date: 18/02/20	Date: FEB 26 2018	Date: N/A

Rev	Date	Change	Revised by	Approved
A	07.10.24	New Issue	KJ/EC/DD	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

DQA: _____ Date: _____

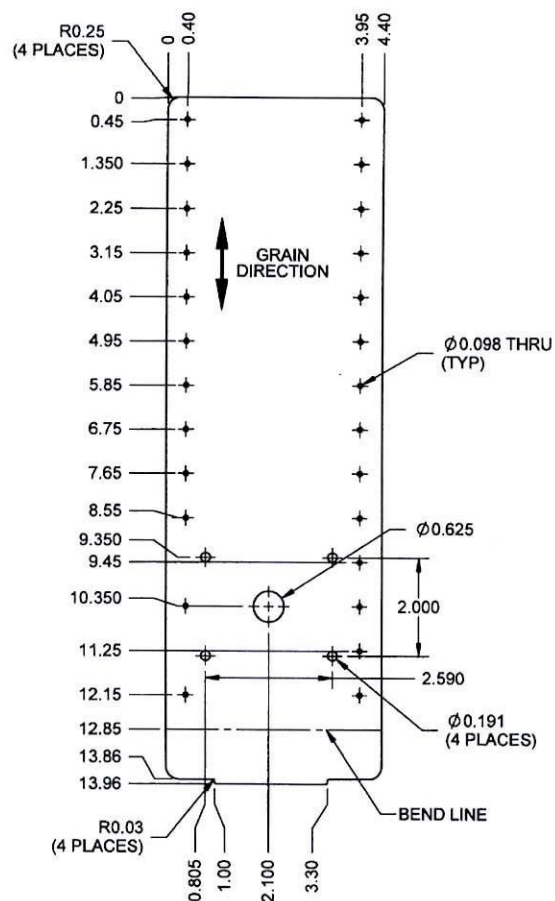


WORK ORDER NON-CONFORMANCE / UPDATE

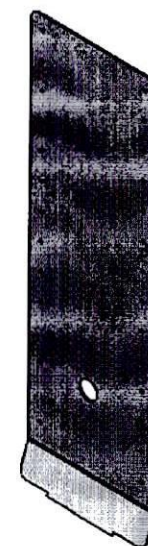
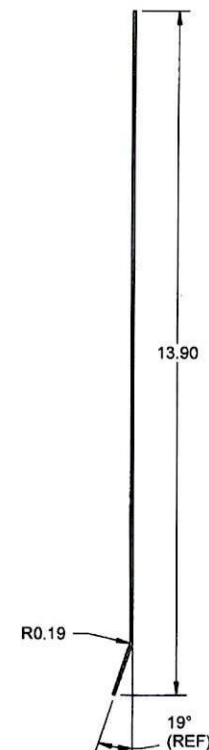
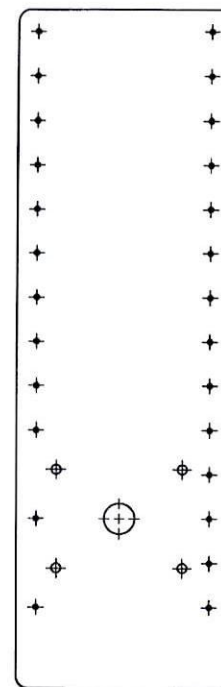
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor Approval Verification
					QC / QA Coordinator Approval
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐				
Misidentified ☐	Past Due ☐	OTHER : _____			



**D3639-3F FLAT PATTERN
(D3639-4F OPPOSITE)**



**D3639-3 DOUBLER
(WAS GENEVA P/N G10604-4)
D3639-4 OPPOSITE
(WAS GENEVA P/N G10604-5)**

RELEASED
07.09.07 #

- NOTES:**
- 1) MATERIAL: 2024-T3 ALUMINUM SHEET 0.050 THICK PER QQ-A-250/4 OR AMS 4037 (REF DART SPEC M2024T3S.050)
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3639-3/-4" USING FINE POINT PERMANENT INK MARKER
 - 7) WEIGHT: 0.3 lbs

DESIGN	TS	DART AEROSPACE USA, INC.	
DRAWN	LE	PORT HADLOCK, WA	
CHECKED	EB	DRAWING NO.	REV. A
MFG. APPR.	EB	D3639	SHEET 2 OF 2
APPROVED	EB	TITLE	SCALE
DE APPR.	EB	DOUBLER	2:5
DATE	07.07.27	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC.	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.			

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
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Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					